ABSTRACT

What is proposed is a heat-transfer interface device for use in a range of up 320°C working temperatures for transfer of heat from a source of heat to a heat-receiving object under severe conditions. The device comprises an elastomeric material filled with an electrically-nonconductive and thermally-conductive filler material. The elastomeric material may have recesses on the surface or the surface may be curved, e.g., on the side facing the source of heat for forming a space between the surface of the device and the mating surface of the source of heat. The elastomeric material is clamped between the heat source and heat receiver in a compressed state so that when it is expanded under the effect of an increased temperature, the material is redistributed and the recesses are flattened. The elastomeric material comprises perfluoroelastomer polymer, and the filler can be selected from boron nitride, aluminum nitride, beryllium oxide, etc. If necessary, a combined mixing-assisting and compression-set reducing agent in the form of perfluoropolyether can be added.